

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF THE CLAIMS

Claims 1-2 (canceled)

3. (currently amended) ~~The non-contact power supply system according to claim 1,~~
~~wherein~~ A non-contact power supply system comprising:

a moving body;

a plurality of induction lines arranged sequentially along a moving path of the moving body and adjusted to an equal impedance at a predetermined frequency; and

a plurality of power supply units respectively transforming direct current to alternating current of the predetermined frequency by means of a plurality of switching devices each driven by a rectangular wave signal, and feeding the transformed current as output current to the induction lines,

the moving body including a pickup coil facing the induction lines, the moving body having a load varying in power consumption, the load being fed with power from electromotive force induced to the pickup coil, wherein

the power supply units each includes a measuring unit for measuring power consumption and output current fed to the induction lines and a calculation unit for determining a phase difference between the output current fed to the induction lines and the rectangular wave signal based on the output current and power consumption measured by the measuring unit,

a specific one of the power supply units and the other power supply units are connected in series via signal transmission lines,

the specific power supply unit includes

a reference pulse generator circuit for outputting a synchronization signal as the command signal of the predetermined frequency to drive the switching devices;

a phase adjustment circuit for compensating for a delay of the synchronization signal outputted from the reference pulse generator circuit and transmitting the signal to the power supply unit connected downstream, the delay being caused by a line length of the signal transmission line between the specific power supply and the power supply unit connected downstream; and

a phase difference detection circuit for detecting a phase difference between the synchronization signal transmitted from the phase adjustment circuit and a return synchronization signal fed back from the downstream power supply unit to which the synchronization signal has been transmitted,

the specific power supply unit advances or delays the rectangular wave signal in response to the synchronization signal outputted from the reference pulse generator circuit according to the phase difference determined by the calculation unit, thereby to drive the switching devices,

the phase adjustment circuit corrects a phase of the synchronization signal, which has been outputted from the reference pulse generator circuit, according to the phase difference detected by the phase difference detection circuit, and transmits the signal to the downstream power supply unit,

each of the other power supply units ~~uses~~ advances or delays the rectangular wave signal in response to a synchronization signal having been received from the upstream power supply unit connected upstream as the command signal according to the phase difference determined by the calculation unit, thereby to drive the switching devices,

each of the other power supply units includes

a phase adjustment circuit for compensating for a delay of the synchronization signal having been received from the upstream power supply unit and transmitting the signal to the power supply unit connected downstream, the delay being caused by a line length of the signal transmission line between the power supply unit and the power supply unit connected downstream; and

a phase difference detection circuit for detecting a phase difference between the synchronization signal transmitted from the phase adjustment circuit

and a return synchronization signal fed back from the downstream power supply unit to which the synchronization signal has been transmitted, and
each of the phase adjustment circuits of the other power supply units corrects a phase of the synchronization signal having been received from the upstream power supply unit according to the phase difference detected by the phase difference detection circuit, and transmits the signal to the downstream power supply unit.

4. (previously presented) The non-contact power supply system according to claim 3, wherein each of the other power supply units includes a backup synchronization signal generator circuit for forming a backup synchronization signal of a same phase with reference to the received synchronization signal, and when the command signal is not inputted from the upstream power supply unit, advances or delays the rectangular wave signal in response to the backup synchronization signal as the command signal and drives the switching devices.

Claim 5 (canceled)

6. (currently amended) The non-contact power supply system according to claim 3~~claim 4~~, wherein a capacitor and a variable inductor are connected in series with the induction lines, and

the induction lines, capacitor, and variable inductor connected in series have an impedance of the predetermined frequency set as a capacitive reactance.

Claims 7-8 (canceled)